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WEEKLY BULLETIN

OF THE OFFICE OF

WESTERN AGRICULTURAL EXTENSION,

BUREAU OF PLANT INDUSTRY,

U. S. DEPARTMENT OF AGRICULTURE.

Volume I.

WEEKLY BULLETIN
Of The Office Of
WESTERN AGRICULTURAL EXTENSION.

Vol. 1.

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11 March, 1911.

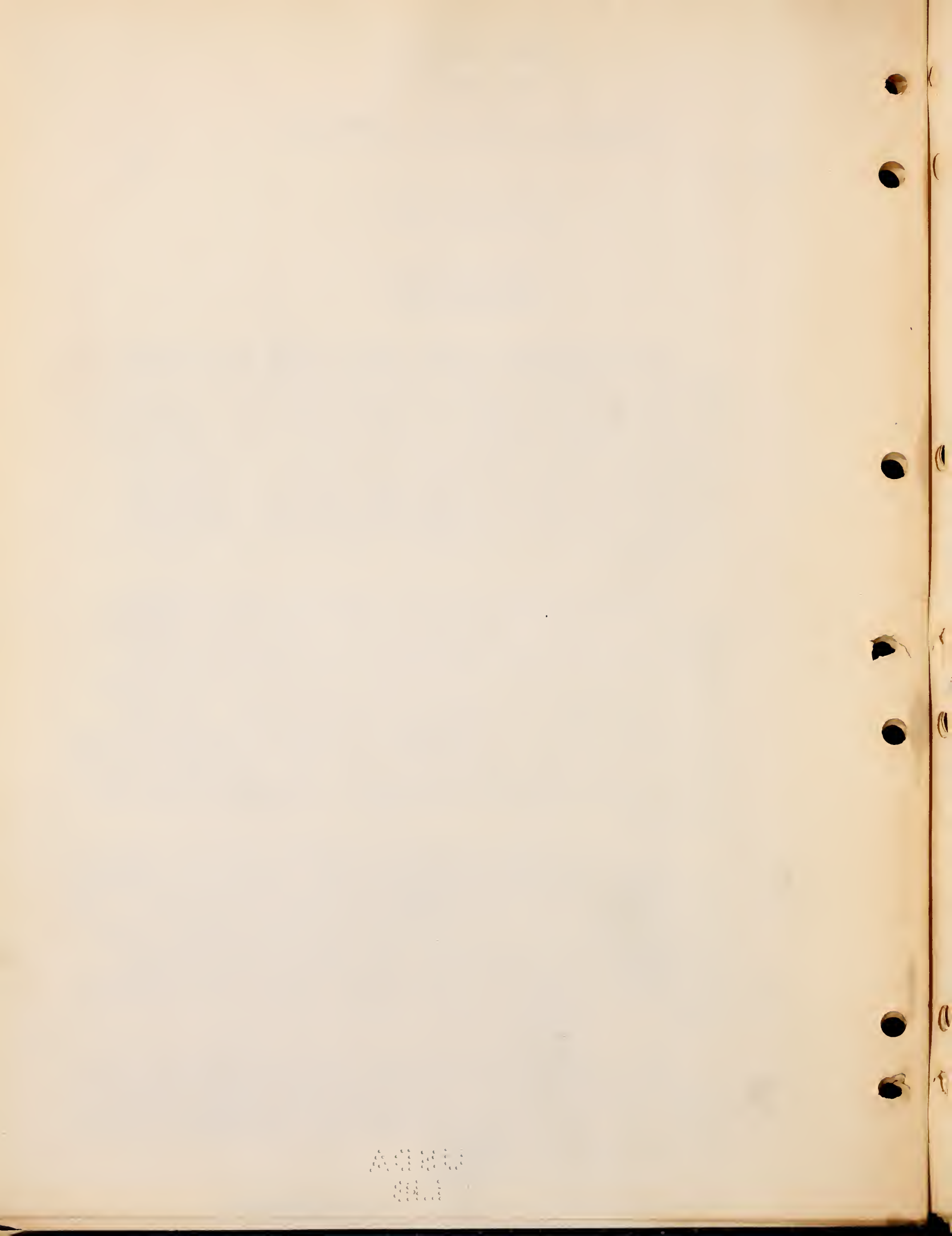
INTRODUCTION

Since November, 1908, this office has issued circular letters to the field men from time to time and by this means an effort has been made to keep the men in touch with the office and with one another. At first these circular letters were used chiefly as a means of instructing the field men in fiscal matters, but recently it has been thought desirable to incorporate in the series other matters of general interest; in fact, to make the circular letters a means for the interchange of ideas among the men of the office.

Practical experience in issuing these circular letters has shown that many items have been omitted because of their brevity or their incidental nature. It has been decided, therefore, to substitute for the circular letters a regular bulletin to be issued on Saturday of each week. The field men are invited to contribute to this Weekly Bulletin. As the circulation will be confined to members of this office and to a very few cooperators in other offices of the Bureau, the contributions may be very informal in character and the greatest freedom of expression will be welcomed.

The Weekly Bulletin will include matters concerning fiscal regulations and rulings, as well as specific instructions concerning field and office work. It will be the aim to so distribute these matters in the Bulletin that, if it is so desired, the pages carrying these instructions may be removed and filed in the proper folders of the filing system, to be available for reference together with earlier circular letters.

It is the present purpose to hold in this office enough copies of each issue so that when a sufficient number of pages have accumulated they may be bound together and indexed and a bound copy furnished to each of the field stations.



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FLORET STERILITY OF WHEAT.

Under the above title Mr. E. C. Johnson, of the office of Grain Investigations, has published, in PHYTOPATHOLOGY (1: 13-27), an account of experiments made at the San Antonio Experiment Farm and at the Minnesota State Experiment Station to determine what fungi chiefly caused the sterility in wheat. He concludes that where the spores of the stem rust of wheat find lodgment within the glumes of the wheat flower, they may germinate, and the mycelium, by invading the ovary, may cause sterility. Other fungi may also produce the same result. It was observed that these fungus spores may be carried into the wheat flower by thrips, which often infest the wheat plants at San Antonio.

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SAN ANTONIO PLANT DISEASE SURVEY.

During the fiscal year 1910 Messrs. Heald and Wolf, of the University of Texas, made a survey of the plant diseases in the vicinity of San Antonio, Texas. The work was done on funds allotted from this office and was under the supervision of Mr. W. A. Orton, of this Bureau. As a result of this survey a manuscript of 250 pages, with about thirty plates, has been submitted for publication as a Bureau bulletin.

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FUNDS FOR DRY LAND AGRICULTURE.

The act of Congress making appropriations for the Department of Agriculture for the fiscal year 1912 carries an item providing \$70,000 for the office of Dry Land Agriculture, an increase of slightly more than \$38,000 above the appropriation for the current year.

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TIME.

The Secretary of Agriculture has issued, under date of January 1, 1911, General Order No. 144, which materially changes the methods of granting and recording leave for the employees of this Department. The following abstract shows how these changes affect the handling of leave at field stations:

New forms have been devised upon which to apply for leave, both sick and annual, including fractional day leave. If a supply of these is not at once received, application should be made to the Washington office. These blanks will explain themselves. In every case the blank for the signature of the Chief of Division or the official in charge should be left for Mr. Scofield's signature, the application bearing the initials of the farm superintendent, if the leave is for an employee other than himself. The date line in each case should show where the employee is located.

When the application for leave is on account of sickness for a period of two days or less and is not accompanied by the certificate of attending physician, the certificate on the back of the form must be made out by the applicant and sworn to before a notary public and the reason why no physician was employed given. If the application for leave is on account of sickness for a period exceeding two days, the certificate of the attending physician on the back of the form must be secured and certificate of notary is not required. The aggregate of affidavit sick leave shall not exceed twelve days in any one year.

Officials in charge of field stations may grant employees of their respective stations permission to be absent for periods not exceeding five days in each case -- that is, the application for the leave should be made out in regular form and forwarded to the Department as soon as it is known the leave is to be taken, but if there is not sufficient time to await the return of the leave slip, the employee may take the leave upon securing permission from the superintendent. The report of the return to duty should be made out and sent to the Washington office in the usual way. All applications for annual leave in excess of five days must be approved by the Chief Clerk of the Bureau and returned to the field station before the employee is permitted to take the leave.

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SEED DISTRIBUTION AT SAN ANTONIO.

A resume of the seed and plant distributions from the San Antonio Experiment Farm for the year 1910 shows that, during February, Seedling Date Palms, in lots of from 30 to 50 each, were distributed to 15 persons in the vicinity of San Antonio. During October and November, Appler Rustproof Oats, principally in half-bushel lots, were sent to 39 persons in that vicinity, and 35 received small lots of cuttings of Japanese Sugar Cane during December.

CORRESPONDENCE.

Attention is called to W. A. E. Circular No. 41, on "Correspondence", dated October 16, 1909, which requests each farm to send in carbon copies of all its outgoing correspondence except such as is addressed to this office. Up to date, only three of our farms -- Yuma, San Antonio, and Truckee Carson -- have sent in any considerable number of these carbons.

The files of the copies submitted by the three farms mentioned have proved useful in a number of ways and the submission of such carbons is the only practicable way in which this office can comply with the spirit of the Bureau order referred to.

It is therefore requested that each farm hereafter send in carbons of all outgoing correspondence except such as is addressed to this office.

COTTON IN LOWER CALIFORNIA.

Peterson wires that arrangements have been made for planting 200 acres of acclimatized Egyptian cotton, Yuma variety, by the Cudahy syndicate in Lower California.

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FILES.

A system of filing very well adapted to the method described for filing correspondence in W. A. E. Circular No. 20, on "Files", issued June 9, 1910, is sold by the Globe-Wernicke Company. In it the tabs on the alphabetical guides are 1/6 cut and all to the left of the middle, being printed in black on gray press board. The folder for each letter of the alphabet (or whatever subdivision of the alphabet may be used) also carries a tab corresponding in position and lettering with the tab on the corresponding guide; these folder tabs, however, being colored red, and of course being lower than the guide tabs. The special folders for firms or individuals are printed with half cut tabs all to the right of the middle, each tab bearing two lines, upon which may be written the name and address of the correspondent.

It is thought that this system would expedite the accurate handling of the correspondence files on the farms. A complete set including 1,000 extra heavy folders with half cut right tabs, and 25 division alphabetical guides and folders, all as described, will cost approximately \$11.50. A folder illustrating this system is enclosed herewith.

Another device that may be of interest is a bellows folder. This is a single folder with separate pockets and an extension capacity of perhaps eight or ten inches. The pockets of this folder may be divided alphabetically, with 20 pockets, or monthly with twelve pockets. It is thought that perhaps the monthly folder might be useful in filing the correspondence with this office, which is presumably of a greater volume than any other.

FUNDS FOR FORAGE CROP INVESTIGATIONS.

The act of Congress making appropriations for the Department of Agriculture for the fiscal year 1912 carries an item providing \$20,000 for the office of Forage Crop Investigations. Heretofore this work has been carried on under the appropriation for Congressional Seed Distribution.

FISCAL REGULATIONS.

Mr. Peterson recently submitted an account containing an item for checking baggage for two consecutive days, at a cost of 20 cents for each piece. Mr. Zappone suspended 10 cents of this charge for each piece, referring to paragraph 9-g of the Fiscal Regulations which says that charges for checking baggage shall be limited to 10 cents "in each case". This Bureau took up the matter with Mr. Zappone, inquiring whether two days' storage did not constitute two separate cases, even though the days were consecutive and the charges paid in one fee. Mr. Zappone replied that the auditor's office in the Treasury Department has interpreted this paragraph of the Fiscal Regulations in connection with paragraph 17, which prohibits the paying of storage charges without specific authority, so as to limit the payment for checking or portorage of baggage to 10 cents in each payment, whether the payment is for a period of one day or more, and to consider checking for more than one day as storage, which, according to paragraph 17, requires specific authority.

In accordance with this ruling, charges for checking baggage should be itemized and listed separately under the dates on which the charges were incurred.

SMITH, ET. AL., ON CROWN GALL.

B. P. I. Bull. 213 merits special attention. The baffling problem of crown gall has been solved and certain similarities between this disease of plants and cancer in animals have been indicated. A circular by Kellerman, calling attention to the danger of spreading the crown gall disease through the use of soil for legume inoculation, is now in press.

PERSONAL.

Prof. Mason is at San Antonio.

Hansen returned to Huntley March second.

Gilman is ill with fever at Klamath Falls.

Cook and Meade will leave Washington for Yuma March twenty.

Gocch was transferred from Truckee-Carson to Yuma March eight.

Thomas transfers from Washington office to Truckee-Carson March twenty.

With the exception of Irish, who is still in Washington, all farm superintendents are at their stations.

25 March, 1911.

STAKES AND STAKE LABELING.

In our rotation work at San Antonio we use two sizes of stakes. For rotation plats and other plats of 1/10 acre or more, a stake of dressed lumber 24" long, 3" wide, and 7/8" thick is used, while for rows or parts of rows a stake 18" long by 2" wide is used. Unless cypress or some other slow decaying wood is available, the lower end of the stake should be treated with creosote or some similar wood preservative. The new stakes are first given a priming coat of white lead and oil and after use they may be planed and repainted and used again.

The larger stakes may carry the entire history of crops and treatments for the rotation experiments, if rubber stamps are used in labeling. The rubber stamp method of labeling rotation plat stakes has been very satisfactory. The stamps are made in Washington. Those carrying the names of the crops are 1" condensed Gothic type, and those giving the plat treatment are 1/2" plain letters. For labeling all other plat and row stakes a set of stencils is used, the letters of which are 3/4" high. It has been found desirable to put as much information as possible on the stakes, as the work is made much more valuable to visitors.

Considerable difficulty has been encountered in finding a water-proof labeling fluid, but after trials of various formulas the following has been selected as being the most satisfactory: white lead, boiled linseed oil and lampblack, mixed to a rather thick paste. This mixture is rather difficult to handle, on account of a tendency to run, but if applied carefully, good letters can be obtained, both with the rubber stamp and stencil. When used for stamps, this mixture may be rubbed into one of the standard rubber stamp pads, and the pad cleaned with turpentine or some other solvent immediately after use. If used with a stencil, this mixture may be used from a regular stencil pot with revolving ball. For the rotation plat stakes, where permanency is important, a coat of varnish applied after the paint of the letters has dried is very helpful.

S. H. HASTINGS.

25 March, 1911.

QUARTERLY REPORTS.

The regular Quarterly Report for October to January has not been made up, and it is proposed to combine this with the report due April first, as was done last year. Superintendents should promptly send in any memoranda which it is desired to include in the April report, including photographs it is desired to use. As the photograph feature of the report is the one causing the greatest delay, no time should be lost in forwarding the suggestions.

TRUCKEE-CARSON NOTES.

March 11, Mr. Headley reports that 16 kilograms of Russian oleaster seed have been distributed in 100-gram lots to such farmers as have made application, and about 9,000 cuttings of Carolina poplar, Norway poplar, tamarisk, and golden willow were also distributed during the week. Cooperative experiments with pasture grasses furnished by Mr. Piper's office have been arranged for with three farmers living in different parts of the project, on different soil types.

LABOR RECORDS.

Labor records for the first four days of March have been received from the San Antonio and Klamath farms, and for the period March 1 to 11 from Yuma. This is mentioned because these are the only labor records for March so far received at this office.

1 April, 1911.

WEIGHT TICKETS.

At the suggestion of Mr. Hastings, this office has recently had printed a supply of tickets for use on the San Antonio Farm in keeping accurate memoranda of crop weights. These are intended to afford a simple record for use by the person doing the weighing in the field; the ticket to be turned in immediately at the office and filed in a 5x3 drawer. These tickets are made up into books of fifty, under W. A. E. Form No. 28, and are about as follows:

Crop_____	Crop_____	Date_____ , 191
Location_____	Location_____	Weighed by_____
Date_____	Gross, _____	
Net wt. _____	Tare, _____	
	Net, _____	
No. _____	No. _____	Posted by _____

PHOTOGRAPHS.

With our estimates for the fiscal year 1913, we will be asked to submit one or two photographs showing the leading feature or features on each project. It might therefore be advisable for farm superintendents to be on the lookout for any features of special interest in this connection and see that photographs are taken. These estimates will probably be requested late in the summer.

There is given below a list of our experiment farms, together with their mail, express, freight, and telegraph addresses, according to our best information. Superintendents will please advise this office of any necessary corrections in this list, and subsequently of any changes as they are made:

Farm.	:	Mail.	:	Express.	:	Freight.	:	Telegraph.
SAN ANTONIO	:	San Antonio, Texas	:	San Antonio	:	San Antonio	:	San Antonio
YUMA	:	Bard, Cal.	:	Yuma	:	Colorado, Cal.	:	Yuma
TRUCKEE-CARSON	:	Fallon, Nev.	:	Fallon	:	Fallon	:	Fallon
UMATILLA	:	Hermiston, Ore.	:	Hermiston	:	Hermiston	:	Hermiston
KLAMATH	:	Klamath Falls, Ore.	:	Klamath Falls	:	Ady, Ore.	:	Klamath Falls
HUNTLEY	:	Osborn, Mont.	:	Huntley, Mont.	:	Huntley	:	Huntley
BELLE FOURCHE	:	Newell, S. Dak.	:	Bellefourche	:	Newell	:	Bellefourche
WILLISTON	:	Williston, N. Dak.	:	Williston	:	Williston	:	Williston
SCOTTSBLUFF	:	Mitchell, Nebr.	:	Mitchell	:	Mitchell	:	Mitchell

1 April, 1911,

PROJECT STATEMENTS.

The project statements for this division, due the first of last November, have just been sent in. An extra copy of each of these statements has been made and is being sent to the project or farm interested. This may be filed and used later for reference in preparing succeeding statements. It is also desired that the statement of the cooperative work for each project be carefully noted and any errors called to the attention of the Washington office. Also any subsequent changes in or additions to this list of projects cooperating at any station should be promptly reported.

SIGNING REPORTS.

The attention of Farm Superintendents is called to the fact that quite often weekly farm reports, pay rolls, labor records, itinerary reports, carbon copies of letters, etc., are received in this office bearing no initials or signatures to indicate who is responsible for them. It should be borne in mind that records and reports of all kinds should bear the autograph signature or initials of the person who is responsible for their accuracy. In the case of carbon copies of correspondence it is, of course, sufficient to use a rubber autograph stamp or even to typewrite the name of the person who signed the original, although autograph initials are to be preferred. These carbons are written on plain paper, and if the signature is not given in some way, the name of the writer can be determined only by deduction and inference.

8 April, 1911.

THE TEXAS PISTACHE.

On March 16 Messrs. Blair and Carr, of the San Antonio Experiment Farm, accompanied Prof. Mason to the vicinity of Comstock, Texas, where they made a field study of the native Texas pistache. They found these plants in flower, collected excellent material, and made extensive cross pollinations. Good material of the pistillate flowers had not previously been collected.

NEMATODES AT SAN ANTONIO.

During the winter Dr. Cobb has been examining some samples of Soil from the San Antonio Experiment Farm to ascertain the extent to which this soil is infected with nematodes. The samples submitted were from an irrigated plat devoted to alfalfa, in which the so-called root rot had done considerable damage. The investigations have proceeded far enough to show that, if these samples are representative, this soil contains approximately 5,000 million nematodes per acre to the depth of 5 inches, and that approximately 75 per cent of these nematodes are probably parasitic upon the roots of the higher plants. Another way of stating this is to say that there are an average of about 8 nematodes in each cubic centimeter of the soil to the depth of 5 inches, and that 6 of these are parasitic. These nematodes vary in length from 0.5 millimeter to 3 or 4 millimeters.

It is now proposed to ascertain whether or not this heavy nematode infection is a normal condition at San Antonio and also whether or not a protracted period of absolutely clean fallowing tends to diminish the nematode population.

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EGYPTIAN COTTON QUOTATIONS.

Samples of Egyptian cotton grown at Sacaton, Ariz., in 1910, and at Somerton, Ariz., in 1909, have been submitted to manufacturers in New England for a statement as to their commercial value and for bids for their purchase. The samples represent a total of about 5,000 pounds, and a bid of 28 cents per pound has been received for this cotton. Middling Upland cotton is quoted at about 14 cents per pound.

INFORMAL BIDS.

The Acting Chief of Bureau has directed that hereafter when informal bids for horses are secured, either for single horses or for teams, the dealer should add to the general specifications laid down by the Department official securing the bids a description of the particular horse or horses he intends to deliver sufficient to identify them. When the voucher covering the purchase is submitted, this voucher should carry the same description. This is done in order to insure the delivery by the dealer of the particular horse or horses he describes upon the bid.

A NEW MAP OF THE UNITED STATES.

The Geological Survey has recently issued a railroad map of the United States 48x76 inches in three sections. The map is dated 1910, and presumably shows all railroads in operation on the first of that year, also all counties and county seats, but is without contour lines. Copies of this map can probably be secured by farm superintendents upon application through this office. It is suggested that the map would be more serviceable if mounted upon cloth, and if requested the maps will be mounted before being sent out.

8 April, 1911.

METEOROLOGICAL REPORTS.

An effort to assemble, for publication in the Weekly Bulletin, a table showing the meteorological conditions prevailing at the various experiment farms has disclosed the fact that in some cases our files are not sufficiently up to date to supply data of interest. It is therefore suggested that farm superintendents endeavor to have these weekly reports sent in as soon as possible, in order that the figures may be included in the Bulletin for the following week.

PERSONAL.

Gooch has been relieved from duty at Yuma and ordered to the Washington office.

Schattenberg reported for duty at Huntley March 30.

Cook and Meade left Washington April 3 for Yuma.

Gilman reports sick again.

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WHITEWASH AND CEMENT-WASH FORMULAS.

The following formulas used by the Light-House Establishment of the Department of Commerce & Labor may prove of value to farm superintendents:

Whitewash.

(This recipe has been found by experience to answer on wood, brick, and stone nearly as well as oil paint, and it is much cheaper.)

Slake half a bushel of unslaked lime with boiling water, keeping it covered during the process. Strain it and add a peck of salt, dissolved in warm water; three pounds of ground rice put in boiling water and boiled to a thick paste; half a pound of powdered Spanish whiting; and a pound of clear glue dissolved in warm water. Mix these well together and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace and when used put it on as hot as possible with paint or whitewash brush.

Cement-Wash.

Take of fresh Rosendale cement three parts, clear sand one part, and mix them thoroughly with fresh water. This will give a gray or granite color, dark or light according to the color of the cement. If a brick color is desired, add enough Venetian red to the mixture to produce that color. The cement, sand, and coloring matter must be mixed together. If white is desired, the walls when new should receive two coats of cement-wash and then white-wash. After the work has received the first coat, a single coat every three or four years will be sufficient.

It is best to thoroughly dampen the wall with clean fresh water and follow immediately after with the cement-wash. This course will prevent the brick from absorbing the water from the wash too quickly, and will give time for the cement to set. Care must

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be taken to keep all the ingredients of the cement-wash well stirred during the application of it. The mixture must be made as thick as it will admit of to be conveniently put on with a whitewash brush.

To Remove Old Paint From Iron.

Dissolve two pounds of potash in a bucket of water; add about $1\frac{1}{2}$ pounds of slaked lime and stir well. With a mop apply this mixture to the paint, and after a few minutes it may be easily removed by scraping. As rapidly as the old paint is scraped off, rinse the iron with fresh water and dry it. This will leave the iron clean and bright.

RAINFALL AT SAN ANTONIO.

During the month of March the protracted drought was broken by a series of beneficial showers. The total precipitation for March, as recorded at the Experiment Farm, was 3.29 inches. The total precipitation for 1910 was 21.02 inches, and for the first two months of 1911 it was 1.87 inches.

ESTIMATES FOR FISCAL YEAR 1912.

Each Farm Superintendent should at once submit an estimate of the amount of money needed by his station for the fiscal year 1912. This estimate should be itemized as fully as possible under the following heads: Salaries (under appointment); labor (under authorization); travel; permanent equipment; supplies; miscellaneous.

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FIELD NOTES.

Allen reports indications of a windy season at Umatilla.

Knorr reports continued drought and high winds at the Scottsbluff Experiment Farm.

Aune reports continued drought at Belle Fourche. From October 1, 1910, to April 5, 1911, less than half an inch of precipitation has been recorded at the Experiment Farm.

Under date of April 6, McLachlan writes from Bard that the Egyptian-Upland hybrid cotton plants which were cut down to the ground last autumn and the stumps protected with earth lived through the winter and have this year put up vigorous shoots, showing blossom buds early in April, with prospect of flowers during the month. It has been found that mature wood of these cotton plants can be rooted very easily, and it therefore appears possible to propagate extensively from select individual hybrid cotton plants. This possibility of propagation by cuttings is particularly important, since these hybrid plants do not come through from seed.

PERSONAL.

Cook and Meade are at San Antonio.

Irish left Washington April 12 for Klamath.

Gilman will resign from the service about the middle of April.

The Civil Service Commission has been asked to certify eligibles from the stenographer-type-writer list to positions as farm clerks at Yuma and Huntley.

22 April, 1911.

A NEW TRUCKEE-CARSON BULLETIN.

Under the title of "Bacteriological Studies of the Soils of the Truckee-Carson Irrigation Project", Dr. Kellerman and Mr. E. R. Allen, of the Bureau of Plant Industry, have published Bureau Bulletin No. 211, issued April 15, 1911. This bulletin deals with the results of Mr. Allen's investigations at Fallon during 1909, which were followed by laboratory work at Washington during the winter of 1909-10. The results of the investigations are condensed in the following conclusions:

(1) Nitrifying, denitrifying, and ammonifying bacteria are well distributed and universally present in the soils of the Truckee-Carson Irrigation Project and become physiologically active if favorable conditions are provided for their development.

(2) The lack of proper decay and humification of organic matter in many of the unproductive soils is due either to unfavorable bacterial conditions brought about by certain physical and chemical conditions or to an unusual bacterial flora.

(3) The nitrifying bacteria in the soils of Fallon, Nev., are active at greater depths than in eastern soils and also seem to be unusually virile in solutions, although the data on these points are not conclusive.

(4) In general, the conditions at Fallon, as in any arid region, favor nitrification, which frequently becomes intense; the conditions rarely favor denitrification. Lack of nitrification, therefore, will not be a limiting factor in crop production, nor is there evidence of overnitrication or injury from excessive quantities of nitrate. Humification studies are probably of paramount importance.

A FREEZE AT FALLON.

Mr. Headley reports under date of April 14 four nights of hard freezing weather at Fallon. The night of April 13 the temperature reached a minimum of five degrees above zero. These temperatures were sufficient to practically kill all of the apple blossoms and buds. These buds were just beginning to swell when the low temperatures came on.

22 April, 1911.

STEREOPTICON LECTURE.

Mr. Headley reports on a stereopticon talk given recently at a district schoolhouse in the Truckee-Carson project. This included an outline of the more interesting phases of experiments with field, vegetable, horticultural, and forestry crops that have been raised on the Experiment Farm, with a few slides, copied from illustrations in agricultural papers and books, demonstrating methods of constructing some handy farm devices. The lantern worked well, and it is believed that these talks will become an important feature of the work of the station. .

PERSONAL.

Peterson has been at Blakersfield, securing bamboo offshoots for Yuma.

ORCHARD HEATERS.

With his report for the week ending April 15, Mr. Headley submits some interesting results of a trial of orchard heaters made during the night of April 14.

Twenty-five Hamilton, one Troutman, one Richardson, and two Ideal heaters were used in an orchard of $1\frac{1}{3}$ of an acre. The first three of these heaters are oil burners; the last named a coal burner. Crude oil could not be obtained in less than carload lots, and it was therefore necessary to use kerosene at 20 cents a gallon — a price too high for heating orchards in a commercial way.

The test was conducted from 10:00 p.m. to 2:00 a.m., during which time the temperature outside the orchard ranged from 27° to 20°. On account of a shortage in fuel, the test was discontinued at two o'clock.

The efficiency of the different types of heaters could not be compared, but the Hamilton and Richardson were the only ones with which the amount of fuel could be regulated. The Hamilton heaters are stronger than any of the other oil heaters used; they have no seams that can leak, and will pack together in more compact form when not in use.

The results of the test were highly satisfactory, as it was found that the temperature of the orchard could be maintained at 28° or above, even with the outside temperature as low as 20°. It is believed that in a larger orchard a more uniform temperature could be maintained.

METEOROLOGICAL REPORTS.

A glance over the meteorological reports from the various stations shows that this information is coming in much more promptly than formerly. Most of the stations are now practically up to date, and beginning with the next issue of the Bulletin a weekly resume of this data will be published.

BELLE FOURCHE FARM ENLARGED.

Under date of April 20, the Secretary of the Interior signed an order withdrawing from entry eighty acres of land adjoining the Belle Fourche Farm on the north, for the purpose of adding this 80 acres to the farm. This makes the farm consist of 280 acres.

FIELD NOTES.

On April 15 Mr. Knorr reported continued cold weather, with a minimum temperature of 10° April 12.

Under date of April 22, Mr. Aune reports continued drought at Belle Fourche. Seeding of small grains has been finished.

A large number of fruit trees and small fruits have been ordered shipped from commercial nurseries to Huntley for experimental plantings.

Mr. Hansen reports, under date of April 15, that the land for forage crops and grains is ready for seeding and that planting is to be begun within a few days.

Mr. Fulkerson made an expedition from Fallon to Pyramid Lake by team during the week ending April 29, for the purpose of inspecting experiments with native desert almonds.

PERSONAL.

Mr. C. L. Gooch, lately transferred from Yuma, died at his home in Washington Tuesday morning, April 25.

Mr. Scofield met with an accident by collision with a street car April 26, resulting in a fracture of his right arm near the wrist.

6 May, 1911.

QUARTERLY REPORT.

The Report on the Field Stations of the Office of Western Agricultural Extension for the period October 1 to March 31 is being distributed this week.

HORTICULTURAL EXPERIMENTS AT SAN ANTONIO.

Mr. Hastings reports that Mr. Blair has been top working English walnut on the native black walnut of Texas, and that it is proposed to work domesticated grapes on the native species and to top work some of the native pecans with improved varieties. This is part of a general program of testing out the native species of trees and vines as stocks for improved varieties, since the ordinary stocks are often quite unsuited to the calcareous black land of the San Antonio region.

CORN ON SUMMER FALLOW AT SAN ANTONIO.

Under date of April 25, Mr. Hastings makes some comments concerning the growth of corn at San Antonio on plats that were summer fallowed in 1910 as compared with plats not summer fallowed. In every case he finds the young plants on the summer fallow plats to be distinctly smaller and less vigorous than on the plats continuously cropped. On April 22, corn on the plat that was summer fallowed in 1910 averaged 16" high, while that on another plat which was cropped to corn last year was 26" high. This difference in growth of the young plants of corn has been noted in Mr. Chilcott's rotation experiments, but not to quite such extremes. No satisfactory reason has yet been advanced for the depressing effect of summer fallow on corn in the early stages of growth. This depressing effect does not, in all cases at least, continue throughout the season, since it is often the case that the yield of corn following summer fallow exceeds the yield of corn in continuous cropping.

CLIMATOLOGICAL.

Dry weather continues at Williston and Belle Fourche.

April 1 Yuma reported a maximum temperature of 95, and on the 11th and 13th a minimum of 42.

Huntley reports a minimum temperature of 20 degrees on April 13, with no rainfall during the month up to the 15th.

Fallon had minimum temperatures of 13 and 17 degrees on the 14th and 15th, respectively, with no rainfall to the middle of the month.

Unusual precipitation continues at San Antonio, 2.67 inches being reported for the week ending April 22, with a total of 3.99 inches for the month to that date.

Mr. Knorr reports a 0.54 inch rainfall during the past week, the greatest amount of moisture since last June, and also on April 29, 8 inches of snow, the heaviest of the year.

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EXPERIMENTS WITH THE DESERT ALMOND (PRUNUS ANDERSONII)
AT PYRAMID LAKE, NEVADA.

By S. C. Mason.

It is known to but few outside the systematic botanists that we have, in the so-called wild peach, wild almond, or desert almond (P. Andersonii), a native shrub of the mountains of Nevada and California, a near relative of the Old World almond. This is a very spiny, much-branched shrub with a deeply penetrating taproot and great drought resistance, occurring in scattering thickets along hillsides and washes over a considerable area of western Nevada and eastern California, surviving summers of almost desert heat and scant rainfall and winter temperatures of 20° below zero. In the early spring the profusion of its showy pink or rose-colored flowers gives a striking note to the landscape.

In September, 1909, the office of Crop Physiology and Breeding Investigations established a cooperative testing garden on the Pyramid Lake Indian Reservation in Nevada. Mr. E. W. Hudson was detailed to this station and remained there until May, 1910. The work was undertaken with special reference to the study of the desert almond and the inauguration of experiments looking toward its utilization in commercial horticulture.

In September, 1909, the writer, accompanied by Mr. Hudson, explored the country around Winnemucca and Pyramid lakes for the purpose of locating groves of this desert almond and noting the conditions under which they were growing, and we found that in localities of unusual moisture distinct varieties of the species appeared, much less spiny than the type and resembling small peach or almond trees, eight or nine feet in height. A group of these of especial promise on the shore of Pyramid Lake, near Pyramid post office, was fenced and cleared of other brush, through the cooperation of Indian Agent Greel, and the following spring (March, 1910) Mr. Hudson was supplied with scions of a number of cultivated plums, with directions to graft them upon the wild almond trees with a view to testing this species as a drought resistant stock. Over 300 grafts of 17 varieties of cultivated plums were inserted upon stock trees carefully plotted and the scions numbered and labeled.

The results of this work were various, but on the whole the success was excellent in the number of scions induced to "take".

With the transfer of Mr. Hudson to Sacaton, Ariz., in May, Mr. Fulkerson was detailed from time to time to work on this orchard, making two trips to Pyramid in August, 1910, putting the grafts in the best order possible and inserting a number of buds of peaches, nectarines, and prunes.

A carefully detailed report on the number and condition of Mr. Hudson's grafts was turned in and the work further supplemented by a trip made in the latter part of April last.

A summary of the work shows 50 per cent of success for all of Mr. Hudson's grafts, over 300 in number, as shown in the table following, with some loss over winter; cleft grafting giving the best results.

Of the types of fruit, the American varieties, like Weaver and Wild Goose, were about equally successful with those of the *P. domestica* type, from 40 to 88 per cent being secured. With the oriental types, Burbank, Wickson, etc., only 9 to 35 per cent were successful.

In spite of the drought and heat, Mr. Fulkerson's budding experiments were, on the whole, interesting; and, though only a small percentage of the peach buds were successful, the percentages of plum and prune buds were very high. Of 58 Crawford peach buds, only 3 were successful, while 13 out of 16 of the Climax plum buds, 6 out of 8 Boston nectarine buds, and 18 out of 19 of the Silver prune buds were successful.

SUMMARY OF NOTES ON GRAFTS OF *PRUNUS ANDERSONII*.

Variety used for scion.	Number : inserted : April, : 1910.	Number : Number: : Aug. 3: : 1910.	Per- : cent: : liv- : Apr. 26 '11.	Length of : growth in : inches.
Lombard plum.....	37	23	62	12
Weaver plum.....	37	30	85	10 to 19
Forest-Garden.....	38	16	42	9 to 16
Burbank plum.....	23	5	22	2 to 4
<i>Prunus simonii</i>	23	5	22	14 to 17
Shippers' Pride.....	23	17	73	12 to 16
French Prune.....	5	2	40	14
Imperial prune (?).....	5	0	0
Hungarian prune.....	4	2	50	Dead
Peach plum.....	6	4	60	Lost
Silver prune.....	9	8	88	4 to 18
Green gage plum.....	24	16	66	3 to 18
Wild Goose.....	28	19	67	6 to 14
Wickson plum.....	41	4	9	Dead or lost.
Bartlett plum.....	3	1	33	8
Climax plum.....	9	3	33	6
Sugar plum.....	7	5	70	8
<hr/>				
Total number scions.....	322	160	50	
" cleft grafts.....	189	118	73	
" whip grafts.....	107	33	30	
" groove grafts.....	9	3	33	

The future behavior and fruiting capacity of these grafts will be watched with much interest, this being, probably, an experiment unique in the annals of American horticulture.

INFORMAL BIDS.

Hereafter, when it is desired to purchase horses, the form shown herewith as page 27 may be used instead of the regular informal bid blank. The use of this form in lieu of the usual informal bid blank is, however, merely a matter of convenience or personal preference, and does not obviate the necessity of securing competition. In sending out, opening, and recommending bids on this form, the same procedure is followed as with the regular informal bid blanks. A supply of these special blanks will be furnished upon application to the Washington office.

FIELD NOTES.

Hansen reports very good progress in farm operations during the week ending May 6.

Aune reports, under date of May 6, that the drought continues, with the wind blowing a gale almost every day.

Continued rainfall is reported at San Antonio, there having been 0.94 inch during the week ending April 29, making a total of 4.92 for the month.

B. P. I. Circular No. 78, "Agricultural Observations on the Truckee-Carson Irrigation Project", by Headley and Fulkerson, is in process of publication, galley-proof having passed this office.

Knorr reports a little over 1-1/2 inches of moisture for the week ending May 6, the largest amount for more than a year falling within one week. May 1 snow and ice in the ditches blocked the water, caused breaks in the banks and had to be shoveled out.

Department of Agriculture
Office of the Secretary
Washington, D.C.

190 .

Mr.

.....

.....

I desire to purchase horse... for the use of this Department. The horse... must be not less than nor more than years old; sound, gentle, and well broken; color.....; weight not less than nor more than pounds; and suitable for purposes.

I should be glad to have you submit, for inspection by the proper officers of this Department, such horses as you may have answering the above description, together with the price which you are willing to take for the same.

Very respectfully,

James Wilson

Secretary of Agriculture.

The Honorable

The Secretary of Agriculture:

I hereby propose to furnish to the Department of Agriculture horse... according to the above description for the sum of dollars each.

.....

VOUCHERS.

Form 3 (salary) vouchers covering services secured under letters of authorization should always be signed by the payee. It has recently been decided that such vouchers fall under the same rules that govern any other vouchers, such as Form A, covering services or supplies secured under authorization. The foot-note on the form 3 saying, "Vouchers for personal service rendered under the immediate supervision of some administrative officer and so certified by him need not be certified by the payee" etc., refers only to services rendered under appointment.

FIELD NOTES.

Aune reports that 1000 pine trees have been set out and preparations made for planting 500 Black Hills spruce. A representative of the Forest Service has been at the farm, making plans for forestry plantings next year. The long drought is having its effect on some of the trees in the forestry, the willows, Russian oleasters, and locust suffering the most.

Knorr reports very good progress in his work for the week ending May 13. Land for potatoes and sugar beets was plowed and harrowed and potatoes and the greater part of the sugar beets planted. Oat stubble on the dry land was plowed and harrowed, and peas planted on the dry land for Mr. Vinall. On the 10th a cold misty rain fell all day with a total precipitation of .32 inch.

Headley reports some rapid changes in temperature at Fallon during the early part of the month, On May 4th a drop of 54.5 degrees, from 83.5 to 29, was recorded; on the 5th from 62 to 51; and on May 6th a range of 36, from 61 to 25 degrees.

Mr. Blair made a trip from the San Antonio Farm to Floresville, Texas, on the 5th, for the purpose of locating and collecting fruit of the Prunus glandulosa.

Umatilla reports several good showers during the week ending May 13, with but little wind, although the precipitation was not heavy enough to make the usual irrigation unnecessary.

The latest meteorological reports for some of the stations have not been received in time for publication in this issue of the Bulletin.

A new club house is being built at Fallon to replace the present mess tent, and arrangements have been made for boarding the men stationed on the farm.

For the week ending May 6, San Antonio reports a maximum temperature of 85 (on the 2nd) and a minimum of 54.5 (on the 6th).

Hastings reports more rain during the first 3 days of the month.

Hansen reports good progress in farm operations during the week ending May 13.

PERSONAL.

Cook and Meade have left Bard and expect to be at San Antonio the first of next week.

Collins and Kempton have left Washington for Victoria and San Antonio, Texas, to look after their corn work at those places.

VOUCHERS.

The Chief of the Division of Accounts recently returned to Mr. Aune a Form 3 voucher covering services rendered in hanging paper. The letter returning this voucher is dated May 22, 1911, and tells how to determine whether to use Form A or Form No. 3 in the preparation of vouchers for services. A copy of this letter is given herewith.

"I beg to return herewith, voucher Form 3 in favor of Arthur M. Padmore, for papering room in temporary Government building. Such expenses should not be submitted on Form 3, but on Form A voucher, as it is presumed that the party doing the work also furnished the paper and other material necessary to do the job.

Form 3 should only be used for personal services, such as the hire of laborers and temporary assistants by the day or month, and Form A should always be used where the services include the furnishing of material, use of horse, vehicles, farm implements, or anything other than strictly personal service.

Please have this account made up on Form A voucher, and submit same through the usual channel for payment, and in future kindly be governed by the above in submitting voucher."

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The office of Dry Land Agriculture has begun the issue of a "Weekly News Letter" on the lines of the "Weekly Bulletin".

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PERSONAL

Mr. Peterson went to El Centro May 12, to see a new style cotton gin in operation.

Mr. Swingle left Washington May 23, for a short trip to Europe and North Africa, to get information on the ripening of dates by artificial means. He expects to return before July 15.

27 May, 1911.

TRANSPORTATION REQUESTS.

Under date of June 1, 1911, the Officer in Charge of Records, Bureau of Plant Industry, is issuing a circular addressed "To all Officers and Employees of the Bureau of Plant Industry," as follows:

"As transportation requests issued on 1911 appropriations are not good after June 30, 1911, you are requested to return without delay any unused 1911 transportation on hand July 1 to this office for cancellation. Until all 1911 transportation is accounted for no vouchers payable from the appropriations for the fiscal year 1912 will be approved for payment in case of any man who is delinquent.

By direction of the Acting Chief of Bureau."

EXAMINATION FOR ASSISTANTS IN DRY LAND AGRICULTURE.

Announcement has been made that on June 17, 1911, an examination will be held to secure eligibles for positions as Assistant in Dry Land Agriculture at salaries ranging from \$1,200 to \$1,800 per annum. The competitors will not be assembled for the examination. Detailed announcements may be secured from either the Civil Service Commission or the Office of Dry Land Agriculture.

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With this copy of the Bulletin is inclosed a reprint from Science on "Humus in Dry Land Farming," by Mr. Scofield.

27 May, 1911.

FIELD NOTES.

In his report for the week ending May 20, Mr. Aune states that the drouth at his station still continues.

Mr. Peterson reports on his Egyptian cotton seed distribution for the spring of 1911, outside of 15 acres planted in the vicinity of Bard and a considerable amount of seed sent to the Cudahy Company in Lower California, a total miscellaneous distribution of 186 pounds, sent to 52 persons in Arizona, Arkansas, California, Louisiana, Missouri, Nevada, New Mexico, Texas, and Old Mexico.

It is announced that Mr. John P. Irish, Jr., was married April 29 at San Jose, Cal. He is at present located on the Frank's Tract in the delta of the San Joaquin River, where he is making some observations on the movement of the underground water and the fluctuations of air temperatures inside Reclamation levees, in continuation of a series of similar observations which have been carried on at the Klamath Experiment Farm. Observations and experiments at the Klamath Farm have been discontinued. Mr. Irish's address is: Frank's Tract, Antioch, Cal., care of Ball's Launch.

For the week ending May 13, Mr. Hastings reports the harvest of the oat hay crop from four of his rotation plats. These plats yielded at the rate of a ton and a half of field-cured hay per acre. He has also received from Washington something over 500 plants of various species of Prunus, chiefly of Prunus glandulosa. These have been planted on the sandy land at the south end of the farm, to be propagated for use both as stocks for other species of Prunus and also for breeding work. The new greenhouse put up during the winter has been completed and plantings are being made in it.

3 June, 1911.

FIELD NOTES.

Hastings reports harvesting oats for grain, May 15-17.

Connections have been made to irrigate the land at the south end of the San Antonio Farm where it is proposed to start a nursery of Prunus stocks.

For the week ending May 20, Hansen reports the spring planting about finished and the grain, alfalfa, and beets up in good shape with enough rain during the spring so that the ground is in good condition and no irrigation has been required.

Allen reports for the week ending May 20 that the tender vegetables have been set in the field, and that there has been an unusually cool and favorable spring at Umatilla, with ten days of showery weather recently.

Hansen reports for the week ending May 27 a heavy rainfall on the 25th and 26th amounting to 2 inches. Some of this came as snow which melted quickly, and no freezing occurred.

Headley reports for the week ending May 20 that he has set out tender garden vegetables, planted corn varieties and sown some alfalfa. The alfalfa on the project has been badly infested with a green louse that has caused a withering of the tips of the growing stems. The injury seems to be lessening as spring advances, and lady-birds have been feeding extensively on the lice.

During the week of May 20, Hastings and Blair explored the country around San Antonio locating fruiting specimens of Prunus glandulosa and Prunus minutiflora. Fruit of the former was scarce while fruit of the latter was abundant.

3 June, 1911.

FIELD NOTES.

Knorr reports some low temperatures during the week of May 27, several nights a minimum of 31° being recorded, while the night of May 26 a minimum of 28° was reached, resulting in injury to alfalfa, early potatoes and garden crops.

Mr. Aune writes, under date of May 27, that the drouth still continues at Bellefourche; that the weather has been cold and windy; that the farmers under the ditch are also having difficulties, in that there was no spring rain to bring up their crops and that they have been forced to flood their land after planting in an effort to bring up their grain; that the available water supply in the reservoir is only half that already applied for, and that the river is so low that no additional storage water is being secured.

FROST DATA.

The Weather Bureau has just issued as Bulletin V a compilation entitled, "Frost Data of the United States," folio, pp. 5, with 5 double page charts showing:

1. Average date of last killing frost in spring.
 2. Average date of first killing frost in autumn.
 3. The latest date of killing frost in spring.
 4. The earliest date of killing frost in autumn.
 5. The average length of the growing season.
- Copies may be secured if desired.

PERSONALS.

Mr. Cook reached Washington June first.

Mr. Lewton left Washington May 31 for a trip to Haiti to give an opinion on the possibilities of cotton culture on the Island for the information of some New York capitalists who have concessions for transportation and agricultural development. He will return June 26.

3, June, 1911.

GRAIN SORGHUM PRODUCTION AT SAN ANTONIO.

Up to the present year the production of grain sorghums has not been possible at San Antonio because of the ravages of the Sorghum Midge. Consequently that region has been without any safe and profitable grain crop, corn being subject to injury from drought and the small grains to injury from rust. Mr. Hastings has been giving this problem much serious attention, and as a result of last season's experiments he became convinced that successful grain sorghum production depended upon securing very early and very late maturity of the crop.

The following letter from Mr. Hastings, dated May 29, constitutes a very encouraging progress report on the present season's work:

"Dear Mr. Scofield:

You perhaps remember that we are carrying on some rather extensive grain sorghum experiments this year, to see if a crop can be produced in spite of the sorghum midge. I have made something of a study of this during the past two years, and among other things found that the midge did not appear in numbers enough to do any damage until late in the season, late enough, in fact, so that I decided by early planting a crop could be produced. My conclusions are borne out by these experiments, apparently, for up to the present time there is no midge damage, and only four insects have been found by a careful search and by the use of an insect scoop every few days, and several varieties are either past the flowering stage or are in full flower, showing that in all probability the first planting will mature a crop with very little if any midge damage. The varieties are making a fine showing and are attracting considerable attention."

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"Agricultural Observations on the Truckee-Carson Irrigation Project", is the title of B. P. I. Circular No. 78, by Messrs. Headley and Fulkerson, issued June first.

10 June, 1911.

REGARDING TESTIMONIALS.

The copy of the following letter has been received in this office in the course of regular correspondence:

Bard, California, May 25, 1911.
Mr. R. P. Crawford,
Vancouver, Wash.
Dear Sir:-

I have received your letter of May 19, requesting a testimonial as to the efficiency of the Speer Gas Machine.

Our machine has been installed for only three months, but during this time it has given satisfaction in every respect.

Very truly yours,
W. A. PETERSON
Superintendent.

I am inclined to doubt the propriety of furnishing testimonials or any statements, either commendatory or otherwise, to individuals outside of the Government service, regarding machinery or apparatus which is being used on our experiment farms. I feel like urging the greatest freedom in commenting upon the efficiency of implements or apparatus for the benefit of men in our own office, and I would greatly appreciate it if the field men would make it a regular practice to send in for publication in the bulletin statements regarding the machinery and apparatus which they are using on the field stations, but I believe all requests for testimonials or opinions solicited by people outside the Department, certainly those outside the Government service, should be given no consideration.

C. S. S.

MILEAGE AND SCRIP BOOKS.

Under date of June 1, the Officer in Charge of Record issued, "to all Officers and Employees of the Bureau of Plant Industry", a letter quoting a letter from the Chief of the Division of Accounts relative to the purchase and use of mileage and scrip books. A copy of this letter is inserted herewith, together with samples of the new forms mentioned therein.

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF PLANT INDUSTRY.

OFFICE OF RECORDS.

Washington, D. C.,

June 1, 1911.

To All Officers and Employees
of the Bureau of Plant Industry.

The following letter received from Mr. A. Zappone, Chief, Division of Accounts, relative to the purchase and use of mileage and script books, is self-explanatory, and is reissued for the guidance of the employees of this Bureau:

- "1. Mileage books for departmental travel should be secured only upon recommendation or consent of the administrative authorities of the bureau or office concerned.
2. Government transportation requests must invariably be used in securing mileage and script books. The practice of purchasing these books for Departmental use from private funds must be discontinued.
3. Government mileage and script books must, under no circumstances, be used for travel on personal business.
4. Employees should not attempt to collect from any railroad company, passenger association, or script bureau, such refunds or other moneys due on the return of the covers of mileage or script books. These covers properly indorsed as payable to the Chief of the Division of Accounts and Disbursements, should be forwarded to the Division of Accounts and Disbursements for collection.
5. It is strongly recommended that travelers supply themselves with time-tables showing distances between the points visited to prevent possible errors on the part of conductors or agents in pulling mileage. The traveler will in all cases exercise the same care in the use of Government transportation that he would in traveling upon a personal mileage book.
6. Regarding the use of Form 8-1513: Immediately upon exchanging a Government transportation request for a mileage or script book, the purchaser will fill out one of these forms, forwarding the same to the Chief of the Division of Accounts and Disbursements.

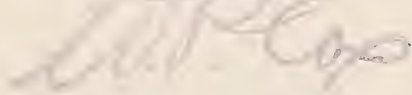
7. Regarding the use of Form 8-1236: The employees will submit these forms in duplicate, attached to the monthly expense account.

A separate blank must be submitted for each book used. Great care should be exercised in filling out these forms as in case of error, settlement of the reimbursement voucher will be withheld pending the receipt of either a corrected statement or an explanation of the discrepancy.

8. On and after July 1, 1911, mileage and script reports must be submitted only on the forms referred to above; the use of all old forms will be discontinued immediately after that date.

9. The use of mileage and script books is strongly recommended for monthly travel in any specified territory. The books not only conserve the public funds but are also a convenience to employees engaged in field work."

Very truly yours,



Officer in Charge of Records.

By direction Acting
Chief of Bureau.

10 June, 1911.

CREDITS ON VOUCHERS.

Attention is called to Regulation No. 31, on page 18 of the Fiscal Regulations, which says, "Accounts must contain no credits on account of the exchange or return of public property of any kind." A common and entirely proper practice has been to allow vouchers to contain credits for the return of the identical containers in which the supplies covered by the voucher were received. For instance, two items on the same voucher might read as follows:

Ten 100 pound sacks of Portland cement @ \$1.00	
each - - - - -	\$10.00
Credit for the return of 10 empty sacks @	
10¢ each - - - - -	1.00
NET TOTAL - - - - -	\$ 9.00

This is permissible because in such a case the containers do not become the property of the Government. However, if the credit for the containers was not included in the voucher covering the purchase of the material with which they were filled, they do become the property of the United States, and no credit for their return can be entered on any later voucher. In fact, they are then Government property just as are any other supplies or apparatus that is purchased with Government funds, and can not be used in exchange for other property any more than could a plow that had been bought under an authorization.

Attention is called to this matter because a few vouchers have recently come in containing credits for containers purchased on previous orders.

FIELD NOTES.

Mr. Blair made a trip to Comstock, Texas, during the week of June 3, to collect fruit of Prunus minutiflora.

Corn on the rotation plats at San Antonio was beginning to silk and tassel May 31.

Mr. Headley reports planting a considerable series of forage crops at Fallon, and the Indian School near there, and twenty-five varieties of sugar beets on an adjacent ranch, as part of a cooperative experiment.

10 June, 1911.

PAYMENT OF INSPECTION FEES.

With a recent account Mr. Hansen submitted a sub-voucher, amounting to 75¢, covering the inspection, by a deputy inspector of the Montana State Board of Horticulture, of three crates of trees shipped into Montana, two of which were shipped from Minnesota and the other from Iowa. This item has been disallowed by the Chief of the Division of Accounts in a letter to Mr. Hansen, dated June 1, 1911, "because it is not a proper charge against the United States Government."

An inquiry through the Bureau Office of Records, elicited the information that this ruling is based on decisions of the Comptroller and of the Attorney General to the effect that a state is without jurisdiction to pass and enforce a law which in any way interferes with the agencies of the Federal Government, either under the guise of taxation or in the enforcement of its police authority. See Decisions of the Comptroller, 2:375; 11:629; 13:672; and 14:256.

CONSTRUCTION OF BUILDINGS ON EXPERIMENT FARMS.

Recently a question has been raised as to the legality of constructing buildings on Experiment Farms where the land is the property of the Federal Government.

In order to settle this question a specific memorandum has been submitted to the Acting Chief of the Bureau of Plant Industry. This memorandum referred to the proposal to construct the necessary buildings (at the estimated cost of \$6,000.00) for the operation of an Experiment Farm in Fall River County, South Dakota, in case the necessary land (160 acres) should be deeded to the Government.

Under date of June 7, the Acting Chief of the Bureau, Mr. W. A. Taylor, has ruled that the appropriation for the Office of Dry Land Agriculture does not give legal authority for the construction of the proposed buildings, and that, "The statutory prohibition against the erection of permanent buildings without specific appropriation appears to apply in this case." In view of the similarity between the wording of the appropriation for the Office of Dry Land Agriculture and for the Office of Western Agricultural Extension, it will be assumed until further notice that we also are without authority for the construction of buildings.

17 June, 1911.

EXPRESS.

Arrangements have been made with various express companies whereby shipments between our field stations and other points may be handled without cash payments being made, bills bearing the approval of our superintendents being submitted by the express companies to the Department. This covers all of our regular stations except Huntley, for which negotiations are now under way. The stations and express companies involved in the arrangement already completed are as follows:

San Antonio (San Antonio, Texas): Pacific Express Company, Wells Fargo & Co., and the American Express Co.
Yuma (Yuma, Arizona): Wells Fargo & Co.
Truckee-Carson (Fallon, Nevada): Wells Fargo & Co.
Umatilla (Hermiston, Oregon): American Express Co.
Belle Fourche (Newell, South Dakota): American Express Co.

VARIATION IN PLAT YIELD TESTS.

Superintendents will please keep in mind the desirability of securing data on the variation of row and plat yields where the same crop and similar cultural conditions have been used. Whenever the pressure of the work will permit, rows and plats devoted to the same crop, with the same treatment, should be harvested and weighed separately, if for no other reason than to secure as much data as possible regarding the variation of the land in crop producing power. Where field crops are grown in rows and conditions permit, the row yields should be recorded separately and in every case where possible notes should be made during the growing period as to the general appearance of the fields as to uniformity or the nature of observed irregularities.

WEEKLY REPORTS.

Some of the Farm Superintendents are not sending in promptly their weekly reports. Such reports are essential and must be submitted. Hereafter the receipt at this office of each weekly report will be acknowledged by card, and overdue reports will be requested by card. These cards should be filed for future reference.

17 June, 1911.

FIELD NOTES.

Hastings reports, under date of June 3, harvesting Canada peas, and peas and oats yielding 3870 and 2460 pounds per acre respectively. Corn is beginning to be affected by drouth; the last rain of consequence fell April 27.

Headley reports the Russian oleaster coming into bloom on May 30th and in full bloom June 6th. He also reports on weather conditions during May, 1911, as compared with that month in former years, showing that this year the weather has been unusually cold and windy.

PERSONALS.

Dr. Galloway returned June 12 from a year's trip, on which he travelled in Japan, China, Java, Algeria, and England.

Collins and Kempton have returned to Washington from San Antonio.

MINIMUM TEMPERATURES ON TRUCKEE-CARSON PROJECT.

Mr. Headley has been collecting data on minimum temperatures during May at seven points on the Truckee-Carson Project. Three of these are on the Experiment Farm, two are on high land on the northwestern side of the Project, and two on the lower land on the southeastern side of the Project. These data show considerable variation in the minimum temperature, the higher stations being warmer, though it appears that local topography has more direct influence than absolute latitude.

The table on the following page shows the location and altitude of the observation stations, the mean minimum temperature for May, 1911, together with the greatest difference for any one day on the Experiment Farm, and for all seven stations:



17 June, 1911.

Location and Altitude	Experiment Farm.			Island Ranch	Summit Ranch	Swingle's Ranch	Indian School
	Official shelter	Hill	Orchard				
	3971 ft.	3979 ft	3966 ft.	3920 ft.	4175 ft.	4080 ft.	3915 ft
Mean min. temp. for May 1911 Degrees F	36.4	38.4	34.9	36.6	39	39	35(a)
Greatest difference of readings on Exptl. Farm, May 10.	26	29	21				
Greatest difference of readings on Pro- ject, May 4.	29	36	35	40	43	42	43

(a) First 20 days of the month only.

The hill and orchard temperatures are from the same stations as reported in B. P. I. Circular No. 78.



24 June, 1911.

INVENTORIES.

There have been sent to each of our field stations four copies of Schedule A and six copies of Schedule B, upon which the inventories for the fiscal year 1911 should be rendered immediately after the receipt of the regular inventory statement for June. If additional copies of either of these schedules are needed, they will be furnished upon request.

The system of checking the inventories by monthly statements sent out from the Washington office has been in use during all of the past year, and it is hoped that the number of errors in the inventories may be reduced to a minimum.

SALARY ESTIMATES.

Each Superintendent should send in immediately a detailed estimate of the salary liabilities for his station during the coming fiscal year. This should cover all employees now under appointment, and should show the estimated liability for each employe for each month of the year. Special attention should be given to the estimates for such as are employed only occasionally or irregularly. These estimates should be sent in at once, for use in opening the accounts of the new fiscal year.

Hereafter, whenever a new appointment is requested, an estimate covering the remainder of the fiscal year then current should be included, giving by months the estimate of the salary liability for the appointee. When an appointment is requested by telegraph, the estimate should be promptly transmitted by mail.

PERSONALS.

Mr. Errett G. Smith, of Lawrence, Kansas, has been appointed from the Civil Service register to serve as clerk, stenographer, and typewriter on the Yuma farm, the appointment taking effect June 19.

Mr. H. S. Smith has been transferred from the Bureau of Supplies and Accounts, of the Navy Department, to our Washington office, where he will be placed in charge of supplies and accounts for the division, succeeding Mr. Brodie, who is to be assigned to the Huntley farm early in July.



24 June, 1911.

FIELD NOTES.

The latest weather report from San Antonio shows a maximum temperature of 105° June 11.

During the week ending June 10, Yuma experienced a range in maximum temperatures from 99° on June 9 to 105° on June 7.

The weather on the Umatilla project became much warmer during the week ending June 10, according to Mr. Allen's report of that date.

Most of the grains on the San Antonio farm were threshed during the week ending June 10. Yields were low, owing to the grain rust.

On June 16, plantings were made on the San Antonio farm of three varieties of grain sorghum, to determine whether a late planting will mature a crop of seed.

The only trees producing fruit at San Antonio this year are either such as put out second blossoms or those that did not flower till after the killing freeze of February 23.

On June 10 there was .15" precipitation at the Belle Fourche farm. Mr. Aune reports that otherwise the drouth has remained unbroken up to June 17. All the trees on the farm are doing well, however, and are making a good growth.

Mr. Knorr writes that as the result of a rain June 15 and 16, all crops are in good condition. Dry land winter wheat and dry land barley are the only crops that up to the present time have been seriously affected by drouth. Weeds in the grain fields are unusually thick, and experiments are to be made in spraying to eradicate them.

Last fall about 40 $\frac{1}{2}$ -bushel samples of Appller's Rust-proof oats were sent out from the San Antonio farm for trial by farmers in that region. Of the 19 farmers reporting up to June 17, 9 considered this variety better than the one they had been growing, 3 considered it poorer, and 7 reported that it had not received a fair trial.

During the week ending June 17, Mr. Headley made trips to what are known as the Island Ranch and Stillwater districts of the Truckee-Carson project, to make a study of the diseases of such grains as were headed out. He found them to be absolutely free from rust or smut, though the farmers say that in some previous years the rust has been very heavy.

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The B. P. I. unnumbered circular entitled, "Suggestions to Settlers on the Belle Fourche Irrigation Project," by Mr. Aune, is now in galley proof.



1 July, 1911.

FIELD NOTES.

San Antonio experienced maximum temperatures of 101° on the 14th, 16th, and 18th, and 102° on the 15th.

Mr. Aune reports a continuation of the drouth during the week ending June 24, with maximum temperature of 101.

During the week ending June 17 the maximum temperature at Yuma has ranged from 108° on the 12th, to 98° on the 17th.

Temperatures at Huntley during the week ending June 17 have been moderate, the maximum ranging from 84.5° on the 15th to 78° on the 11th and 12th.

There was no precipitation at Fallon during the week ending June 17, and the temperature ranged from a maximum of 95° on the 11th and 12th, to a minimum of 50° on the 11th and 14th.

Mr. Allen reports for the week ending June 17, the continuation of irrigation of various crops and experimental plats. The porous condition of the soil at Umatilla makes weekly irrigations necessary on all the shallow rooted crops. The first crop of alfalfa on the grounds and in the experiments was cut and stacked. The yield was light. Some strips of red clover which were planted last year for use as cover crops were plowed in. The top growth was large and the root growth quite heavy. Somewhat of a change seems to have taken place in the texture of the soil during the growth of these crops, as it holds together much better than when sown a year ago.

During the week ending June 24 Mr. Allen reports the remodeling of the farm barn and the installation of weather instruments. On the 26th a shower did much good, but it was not heavy enough to make irrigation unnecessary:

At Huntley the work of thinning and cultivating sugar beets was well under way during the week ending June 17. This work is being done by a German family employed by the Billings Sugar Company. The stand is very good and satisfactory growth is being made following the spring rains. Oats and barley are beginning to head and so far have needed no irrigation. Harvesting of the first crop of alfalfa has been commenced, and a fairly good yield is expected. Mr. Hansen reports that there appears to be but little difference in the crop resulting from early and late irrigation, and that if there is any difference, the alfalfa irrigated late seems to be better than that irrigated early. The crops on dry land are doing fairly well, excepting 18-inch row planting of alfalfa and dry land grass mixtures, put in on spring plowing.

A corral fence has been built, repair work done, and improvements made on fences and gates,

